

REMARKS

Applicants thank the Examiner for withdrawing the prior rejections of pending claims 11-15 and 17 in response to Applicant's Response of June 26, 2008. In the current Office Action, the Examiner again rejects pending claims 11-15 and 17. As set forth in the Office Action having a mailing date of August 26, 2008, pending claims 11-15 and 17 are now rejected as **anticipated** by prior art cited and discussed in Applicant's pending application. However, as explained in more detail below, the current rejections of the claims fail for the same reasons the prior rejections failed, namely, the prior art relied on by the Examiner fails to show **each and every element of the claims** as required to demonstrate anticipation.

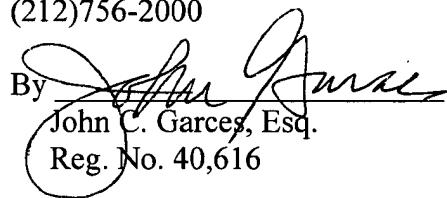
The Examiner has again misinterpreted the prior art or in some cases ignored certain language in the claims in concluding that the prior art shows **all** the elements of claim 11. For a reference to anticipate a claim, the reference must disclose each and every element of the allegedly anticipated claim. If the reference fails to disclose even a single element of the claim, that claim is not anticipated by the reference.

In rejecting claims 11-15 and 17, the Office Action relies solely on the prior art that is disclosed in Applicants' specification in Figures 45-47 (the "Disclosed Prior Art"). However, the Disclosed Prior Art does not disclose every element of each of claims 11-15 and 17 and therefore cannot anticipate those claims. The Disclosed Prior Art is illustrated, for example, in Figures 45 and 46, which are reproduced below.

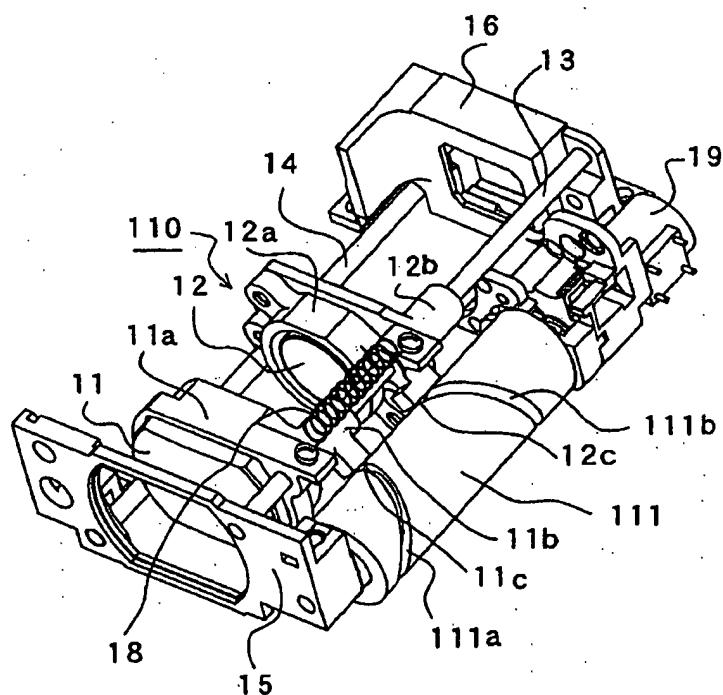
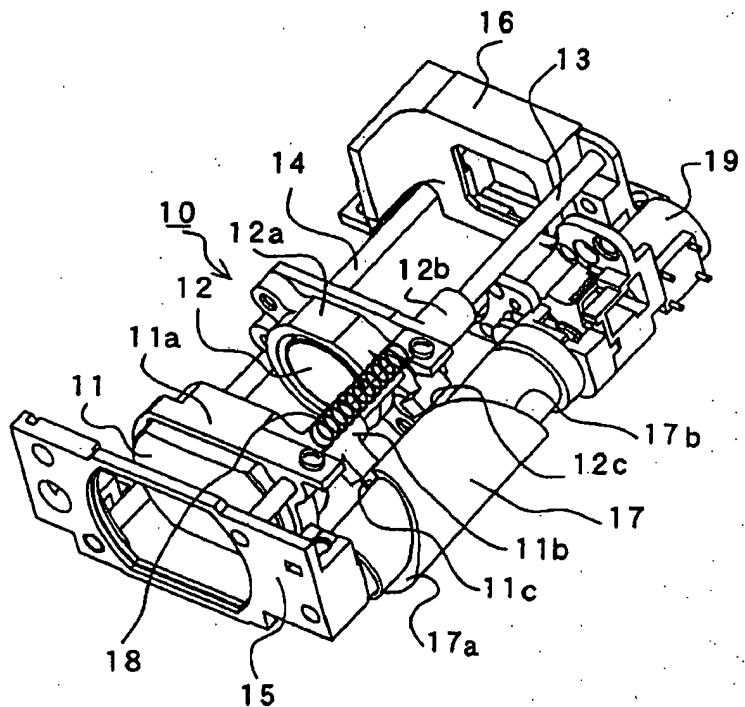
For the foregoing reasons, claims 11-15 and 17 are allowable over the cited prior art. The Examiner is urged to telephone Applicants' undersigned counsel if it will advance the prosecution of this application. The Patent and Trademark Office is authorized to charge any fees required for the entry of this Response, including fees for an extension of time, and any further fees that are properly assessable in this case, or to credit any overpayment, to Deposit Account No. 50-0675, Order No.848075/0067. In the event that an extension of time is needed for entry of this Response that is not otherwise provided for, such extension of time is hereby respectfully requested.

Respectfully submitted,

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Applicants' specification explains the Disclosed Prior Art as follows:

[0022] FIG. 45 is a perspective illustration of a driving mechanism for zooming 10. Though the drawing shows a first lens group 11 and a second lens group 12, the driving mechanism has a third lens

group besides them and zooming is actually performed with the first, third lens groups.

[0023] The driving mechanism for zooming 10 has a boss (a bearing portion) 11b provided at a lens frame 11a of the first lens group 11 and a guide shaft 13 pierced to a boss 12b (a bearing portion) provided at a lens frame 12a of the second lens group 12 so as to move the first and the second lens group 11, 12 as sliding through the guide shaft 13.

[0024] Each of lens frames 11a, 12a has a hole portion (unshown) at the position opposite to boss 11b or 12b, through which the slide shaft 14 is pierced whereby the first and the second lens group 11, 12 is prevented to rotate. The above mentioned guide shaft 13 and the slide shaft 14 fixed so that one end is fixed to a front fixing frame 15 and another end is fixed to a rear fixing frame 16.

[0025] Meanwhile, the above mentioned boss 11b has a protruded cam pin (a cam groove inserting member) 11c and boss 12b a protruded cam pin (a cam groove inserting member) 12c, which are contacted while pressing to a first cam plane 17a and a second cam plane 17b respectively.

[0026] The pressing function of the cam pin 11c or 12c is derived from a tensile force of a coil spring 18 which is fastened to tighten between a lens frame 11a and 12a. That is, the coil spring 18 is a spring for tensile force, one end of which is fixed to the lens frame 11a, another end of which to the lens frame 12a and gives a spring force in a direction for approaching these lens frames 11a and 12a each other whereby the cam pin 11c and the cam pin 12c press the first cam plane and the second cam plane respectively.

[0027] The cam for zooming 17 is rotated through a rate reducing device by a motor 19 and the cam pin 11c, 12c are driven along the first and second cam plane 17a, 17b whereby the first lens group and the second lens group move along a direction of the optical axis for zooming.

[0028] A camera which zooms a viewfinder optical system using the above mentioned cam for zooming 17 is already publicly known (see Japanese laid open patent publication JP1998-161194).

[0029] FIG. 46 shows a driving mechanism for zooming 110 provided with a cam for zooming 111 having a first cam groove 111a and a second cam groove 111b. In the driving mechanism for zooming, the cam pin 11c of the first lens group 11 and the cam

pin 12c of the second lens group 12 are plunged in to the first cam groove 111a and the second cam groove 111b respectively.

[0030] Thus, as the cam pins 11c, 12c are driven in concordance with rotation of the cam for zooming 111, zooming is performed by moving the first lens group 11 and the second lens group 12 along a direction of the optical axis. Other structure of the driving mechanism for zooming 110 is the same as that of a driving mechanism for zooming 10 shown in FIG. 45.

US 2004/0233303 A1 at ¶¶ [0022] - [0030].

Claims 11 -14

The Examiner has rejected claims 11-14 as anticipated by the Disclosed Prior Art.

Claims 12, 13 and 14 depend from claim 11. The Examiner has failed to demonstrate that each of the elements of independent claim is disclosed in the Disclosed Prior Art. The Examiner has also failed to demonstrate that the additional elements recited in the dependent claims are disclosed in the Disclosed Prior Art.

In comparing the Disclosed Prior Art to claim 11, the Examiner asserts the following:

"Regarding **claim 11**, AAPA [the Disclosed Prior Art] discloses a cam apparatus (a driving mechanism for zooming 110, Fig 46) having a first and second spiral cam grooves (a first cam groove 111a and a second cam groove 111b, Fig 46) for moving an object with a cam-driving force which is generated by cam-driving a cam groove inserting member (a protruded cam pin which is a cam groove inserting member, 11c, 12c, Fig 46) inserted in each cam groove (111a, 111b), a cam apparatus comprising"

Thus, according to the Examiner the cam apparatus having first and second spiral cam grooves of claim 11 is represented in the Disclosed Prior Art by the driving mechanism for zooming 110 having a first cam groove 111a and second cam groove 111b as shown in Fig. 46, reproduced above. As shown in Fig. 46 and explained in paragraph [0029] of Applicants'

specification, the first and second cam grooves are formed with the unitary, single piece cam for zooming 111. It is important to note here that the Disclosed Prior Art does not disclose or suggest that the cam for zooming 111 is configured such that the cam grooves 111a and 111b are adjustable as claimed for example in claim 12.

The Examiner next asserts:

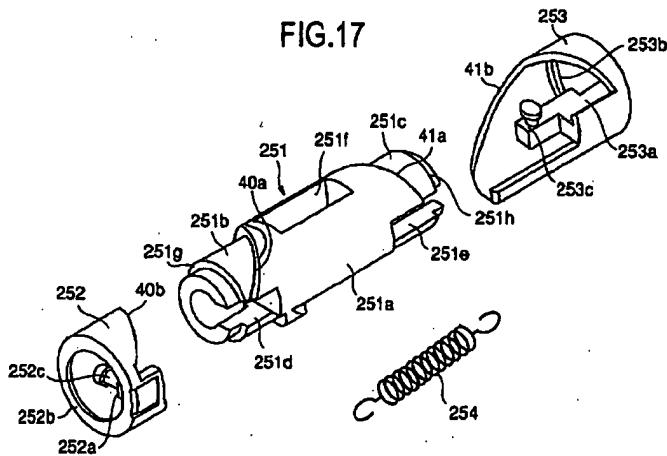
"a cam base body (a cam for zooming 111, Fig 46) having a generally cylindrical middle portion and a first and second sliding portions formed at both ends of said middle portion (Fig 46 inherently shows the cam for zooming 111 has three portions divided by 111a and 111b) and said sliding portions having a smaller diameter than that of said middle portion, said cam base body further comprising a first stepped portion forming an approximately vertical plane between said first sliding portion and said middle portion thereby defining a cam plane of the first spiral groove (a first cam groove 111a) and a second stepped portion thereby forming an approximately vertical plane between said second sliding portion and said middle portion thereby defining a cam plane of the second spiral cam groove (a second cam groove 111b) (see Figure on next page, [0029]-[0030].

As noted above, claim 11 requires (i) a cam base body having a generally cylindrical middle portion and a **first and second sliding portions** formed at both ends of said middle portion and **said sliding portions having a smaller diameter than that of said middle portion**, (ii) a first stepped portion forming an approximately vertical plane between said first sliding portion and said middle portion thereby defining a cam plane of the first spiral groove, and (iii) a second stepped portion thereby forming an approximately vertical plane between said second sliding portion and said middle portion thereby defining a cam plane of the second spiral cam groove. None of those three elements can be found in the Disclosed Prior Art.

First, assuming *arguendo* that the Disclosed Prior Art shows a cam base body having three sections defined by the first and second spiral cam grooves, the cam based body in

the Disclosed Prior art does not have "sliding portions having a smaller diameter than that of said middle portion." The Examiner does not argue otherwise. Indeed, the Examiner appears to ignore this claimed aspect. Thus, the Disclosed Prior Art does not teach or suggest every element of claim 11 and cannot anticipate claim 11.

Moreover, the so-called sliding portions in the Disclosed Prior Art are in fact only end sections of the cam for zooming 111 that are defined in part by the grooves 111a and 111b. Those portions are not the same as the claimed **sliding portions** of claim 11. Also, the Examiner has failed to identify in the Disclosed Prior Art the claimed "first stepped portion . . ." and "second stepped portion . . ." As explained in Applicants' prior response, which is incorporated herein, claim 11 is directed to a cam apparatus of the type disclosed in Applicants' specification. An example of a device as claimed can be found in Figure 17 of Applicants' specification, which is reproduced below for easy reference. Figure 17 is taken from Applicants' US Published Application No. US 2004/0233303 A1.



As shown in Figure 17, and as described in the related portions of Applicants' specification, Figure 17 discloses a cam base body 251 having sliding portions 251b and 251c. As further explained a cam plane 40a is formed at a stepped portion between the middle portion

251a and the sliding portion 251c. That stepped portion is readily seen in Fig. 17 above.

Additionally, cam frame 252 has another cam plane 40b for forming with cam plane 40a a cam groove 40. Similarly, cam frame 253 has another cam plane 41b for forming with cam plane 41a a cam groove 41. In this regard, the specification explains:

With regard to the cam base body 251, the cam frames 252, and 253, after the cam frame 252 is fit to the sliding portion 251b of the cam base body 251 and the cam frame 253 is fit to the sliding portion 251c, one end of coil spring 254 is hooked to the spring hooking portion 252c of the cam frame 252 and another end is hooked to the spring hooking portion 253c of the cam frame 253. Then the coil spring 254 presses the cam frame 252 and 253 in a direction of approaching each other so that the flange portion 252b advances until it strikes the stepped portion 251g as the cam frame 252 slides the sliding portion 251b. With this state, the first cam groove is formed by the one cam plane 40a and the other cam plane 40b. Likewise, the cam frame 253 slides the sliding portion 251c and the flange portion 253b advances until it strikes the stepped portion 251h so that the second cam groove is formed by the one cam plane 41a and the other cam plane 41b with this state. Thus formed cam grooves 40, 41 become spring shaped cam grooves matched with movement of the first and second lens groups 21, 22 necessary to zooming.

US Published Application No. US 2004/0233303 A1 at [0126].

Thus, as explained above, and as supported by Applicants' specification, the Disclosed Prior Art fails to anticipate claim 11 in failing to disclose the sliding portions and first and second stepped portions as claimed.

The Examiner further argues that:

"a first cam frame (first lens frame 11a, Figs 46-47) having another cam plane confronting the one cam plane (first cam plane 17a, Fig 45) of the first cam groove (a first cam groove 111a) and provided non-rotatably so as to be able to slide on one sliding portion ([0025]-[0029])."

According to the Examiner, the "first cam frame" limitation of claim 11 is met by the "first lens frame 11a" of the Disclosed Prior Art. However, such a reading ignores the full limitation of claim 11 that requires that the first cam frame have "another cam plane confronting the one cam plane of the first cam groove." Even if we accept the lens frame meets the naked limitation of a "first cam frame," the lens frame does not have another cam plane that confronts the one cam plane of the first cam groove and it is not "provided non-rotatably so as to be able to slide on one sliding portion" as required by the claim. The Examiner makes similar assertions regarding a "second cam frame." As with the first cam frame, the "Disclosed Prior Art" fails to disclose "a second cam frame having another cam plane confronting said cam plan of the second cam groove and provided non-rotatably on the second sliding portion so as to be able to slide" as required by claim 11. For the foregoing additional reasons, the Disclosed Prior Art does not anticipate claim 11.

Next, the Examiner asserts:

"a forcing device (a coil spring 18, Figs 46, 47) which connect the first and the second frames to the cam base body (a cam for zooming 111, Figs 46, 47)([0029])"

Here, the Examiner has equated the coil spring 18 that connects lens frames 11a and 12a with the claimed "forcing device." However, as already discussed, the Disclosed Prior Art fails to show the **first and second frames** as claimed. Thus, for this separate reason, claim 11 is not anticipated by the Disclosed Prior Art.

Claim 12, which depends from claim 11, is not anticipated for the same reasons that claim 11 is not anticipated. Furthermore, the Disclosed Prior Art fails to disclose or suggest "said first cam base body portion and said second cam base body portion being connected to each other at ends opposite of said first and second sliding portions such that a distance between

said cam plane of said first spiral groove and said cam plane of said second spiral groove may be adjusted in an axial direction." The Examiner argues that coil spring 18 of the Disclosed Prior Art, which connects the lens frames 11a and 12, meets the claimed limitation. The Examiner argues "the pressing function of the cam pin 11c or 12c is derived from a tensile force of a coil spring 18 which is fastened to tighten between lens frame 11a and 12a. Whether the Examiner's assumption regarding the operation of the coil spring 18 is correct is not relevant here because the coil spring 18 does not meet the claim language that "said first cam base body portion and said second cam base body portion being connected to each other at ends opposite of said first and second sliding portions **such that a distance between said cam plane of said first spiral groove and said cam plane of said second spiral groove may be adjusted in an axial direction.**" Indeed, the Examiner does not argue that the distance between the cam planes of the spiral grooves may be adjusted in the axial direction. The Examiner does not make this argument because it is clear from Figs. 45 and 46 that the grooves 111a and 111b are fixed and hence not adjustable. Thus, the Disclosed Prior Art fails to disclose this element of claim 12 and cannot anticipate claim 12 on this separate ground.

Claims 13 and 14, like claim 12, depend on claim 11 and are not anticipated for the same reasons claim 11 is not anticipated. Furthermore, with respect to claim 13, the Examiner has ignored the language in claim 13 that "one of the first and second spiral grooves is sloped." Having failed to identify this element in the Disclosed Prior Art, the Examiner has failed to meet his burden to demonstrate that claim 13 is anticipated. Claim 14 is similar to claim 12. Thus, claims 13 and 14 are not anticipated by the Disclosed Prior Art for those separate reasons.

Claims 15 and 17

The Examiner has also failed to meet his burden of demonstrating that independent claim 15 is anticipated by the Disclosed Prior Art. Claim 17 depends from claim 15.

Claim 15 requires, *inter alia*, a "rotational axis rod having gears at both ends thereof." In other words, claim 15 requires a rotational **rod** having gears located at both ends of the rotational **rod**. While the Examiner asserts that this claimed element is shown in the Disclosed Prior Art, the only support offered by the Examiner is reference to Fig 45 and paragraphs [0019], [0020] and [0027] of Applicants' specification. However, Fig 45 and those cited paragraphs fail to support the Examiner's conclusions. First Fig. 45, which is reproduced above, does not show the claimed rotational axis having gears at both ends. Secondly, the paragraphs relied on by the Examiner do not **expressly or inherently** require that the zooming apparatus 17 have a rotational axis rod having gears at both ends thereof. Rather, those paragraphs merely recite that rate reducing gears are used but without specifying a particular configuration for those gears. Thus, the Disclosed Prior Art is deficient in anticipating claim 15 inasmuch as it fails to disclose every element of claim 15.

Claim 15 further requires a first and second group of rate reducing gears which engage gears positioned at the ends of the rotational axis rod. First, as already explained, the Disclosed Prior Art fails to disclose "the gear at one end of the rotational axis rod." For the first and second rate reducing gears, the Examiner **again** points to general disclosure regarding the use of rate reducing gears. For the Disclosed Prior Art to anticipate claim 15 the claimed configuration of first and second rate reducing gears must be disclosed expressly or inherently therein. The Examiner provides no support in the Disclosed Prior Art that reveals or suggests the

claimed configuration. Thus, the Disclosed Prior Art does not anticipate claim 15 on these separate grounds.

Claim 15 further requires "a cam body driven by the first rate reducing gears, the cam body having at least one spiral cam groove formed by confronting cam planes." As explained above, the Disclosed Prior Art fails to expressly or inherently disclose those claimed features. Accordingly, the Disclosed Prior Art cannot anticipated claim 15.

Claim 17 depends from claim 15 and is not anticipated for the same reasons claim 15 is not anticipated. In addition, claim 17 recites the following further limitations "a cam base body having a generally cylindrical middle portion and first and second sliding portions formed at both ends of said middle portion and said sliding portions having a smaller diameter than that of said middle portion, said cam base body further comprising a first stepped portion forming an approximately vertical plane between said first sliding portion and said middle portion thereby defining a cam plane of the first spiral cam groove and a second stepped portion forming an approximately vertical plane between said second sliding portion and said middle portion thereby defining a cam plane of the second spiral cam groove; a first cam frame having another cam plane confronting said cam plane of the first cam groove and provided non-rotatably so as to be able to slide on said first sliding portion; a second cam frame having another cam plane confronting the said cam plane of the second cam groove and provided non-rotatably on the second sliding portion so as to be able to slide; and a forcing device which connects the first and second cam frames to the cam base body." Those limitations are similar to the limitation that are recited in claim 11. Accordingly, with respect to the overlapping limitations between claim 11 and claim 17, claim 17 is not anticipated by the Disclosed Prior Art for the same reasons that claim 11 is not anticipated.